REMARKS

By way of the present response, claim 13 is amended. Applicants respectfully request reconsideration and withdrawal of the rejections of the claims in view of the above amendments and the remarks advanced below.

In the Office Action, the Examiner states that the oath or declaration is defective because: It is unclear if the spelling of the first named inventor is correct. Currently, the spelling given is "Rui M. Amorin" and it is believed that the correct spelling should be "Rui M. Amorim." In response, Applicants has executed a new declaration correcting the typographical error mentioned above. Therefore, Applicants respectfully request that the Examiner enter the attached new declaration accordingly.

Further, the Examiner objects to the drawings under 37 CFR 1.83(a) by stating that the drawings must show every feature of the invention specified in the claims. Therefore, the "monitoring system" as claimed in independent system claim 13, lines 10-16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. In response, Applicants wish to direct the Examiner to Fig. 2 at 22(1) and 24(1)-24(4), Fig. 3 at 40 and paragraph [0021] of the published application, in which it is disclosed that controller 22(1) monitors each one of buses 24(1)-24(4) for a network signal. Further, it is disclosed that controller 22(1) will continue to monitor buses 24(1)-24(4) until it detects the presence of the link pulses. Therefore based on the above, Applicants respectfully request that the objection to the drawings be removed.

Additionally, claims 13-18, 33 and 36 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner asserts that in independent claim 13, in lines 17-19, the limitation of "a controller that establishes said allowed connection between the associated device and the available server port using one of the available communication channels determined to have the link pulses" is unclear because claim 13 also recites a limitation which appears earlier which requires a "plurality of controllers." In response, Applicants have amended claim 13 as shown above to recite the feature of "at least one of the plurality of controllers." Therefore, it is respectfully requested that the 112 rejection be withdrawn.

Claims 1, 6, 7, 12, 13, 18, 31, 32 and 33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,523,070 to Stapleton et al. (Stapleton) in view of U.S. Patent No. 6,603,741 to Poulter et al. (Poulter); claims 2-5, 8-11, 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stapleton and Poulter in view of U.S. Patent No. 5,754,552 to Allmond et al. (Allmond); claims 16, and 34-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stapleton and Poulter in view of U.S. Patent No. 5,883,894 to Patel et al. (Patel); and claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Stapleton, Poulter and Patel in view of Allmond. These rejections are respectfully traversed at least for the reasons provided below.

The Office asserts that Stapleton allegedly teaches a method for identifying one of a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, and the n inputs of each succeeding controller in the cascade are respectively connected to n outputs of a preceding one of the controllers (Fig. 2, col. 3, ll. 11-15), the method comprising: monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server (fig. 2 and fig. 4, col. 4, ll. 14-24, connection establishment by devices through downstream or upstream connectors).

Further, the Office acknowledges that Stapleton does teach of monitoring the status of the channels but does not explicitly teach the monitoring of the channels for link pulses wherein the presence of link pulses on one of the communication channels indicates that that particular communication channel are not currently being used for data transmission by the server and is available and providing the establishment of the connection channel. However, in related art, the Office relies upon Poulter to allegedly teach "a link pulse exchange method wherein link pulses are used to establish a connection negotiate between for example a device and a server (col. 4, ll. 40-46). Through the negotiation process two network devices are able to monitor each other by way of the link pulses and complete an auto-negotiation process. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize link pulses as taught by Poulter in combination

with the channel selection method as taught by Stapleton. One of ordinary skill in the art would have been motivated to make such a combination wherein Stapleton teaches the need to change communication channels often (col. 5, ll. 3-15) and Poulter teaches that through the link pulse exchange the highest common mode can be negotiated (col. 4, ll. 49-51)." (See page 5 of the Office Action).

It is respectfully submitted that Stapleton and Poulter do not teach, suggest or otherwise render obvious the combinations of features recited in independent claims 1, 7 and 13. More particularly, neither Stapleton nor Poulter disclose the claimed features of "a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, the method comprising: monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected to n outputs of a preceding one of the controllers," as recited in amended claims 1 and 7, and similar features set forth with respect to a system in independent claim 13.

The Stapleton apparatus is a communication device including the use of discrete signal wires in additional to the communications signal wires to determine the position of the devices in the stack/chain. Moreover, Stapleton discloses additional electronic circuitry that sends a pulse down the additional wire whereas each device adds to the length of the pulse. Then the length of the pulse is used to determine the devices position in the stack/chain. Additionally, Stapleton provides yet another signal wire and electronic circuitry that senses the current to determine if a device is at the top or bottom (end) of the stack/chain.

In contrast, in the present invention there are no discrete wires with a variable width pulse used to determine the position of a device in the chain. Also the present invention does not require any additional circuitry to determine if a device is at the beginning or end (top or bottom) of a device chain. Further, the present invention only utilizes signals specifically defined for 10BaseT communications. Another distinction is that the present invention also defines multiple communications connections through the controller (22)

which are connected to a Hub Server whereas Stapleton utilizes a parallel communications interface and is not connected to any type of Hub or switch. In other words, in the present invention the multiple connections, specifically the use of one of those connections, are what are used to determine the devices' position in the stack/chain. These multiple connections are cascaded by the controller for each device with the next device in the stack/chain receiving one less (n-1) connection.

Therefore, Stapleton fails to describe or suggest the claimed structural features of a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, $n > 1$, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, the method comprising: monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected to n outputs of a preceding one of the controllers, as set forth in independent claims 1, 7 and 13, as presently claimed.

The Poulter patent fails to remedy the above shortcomings of Stapleton. Poulter describes packet-based data communication networks utilizing an Ethernet or similar network. This data may be transferred between devices at at least two different rates via port 2 and link or cable 3 as shown in FIG. 2. The devices being able to establish a selected data rate by means of auto-negotiation (see, FIG. 3). With respect to Poulter, the Office asserts that it would have allegedly been obvious to utilize link pulses in combination with the channel selection method of Stapleton. However, even if one were to consider this proposed combination, there is nothing described in Poulter that would have suggested modifying Stapleton to meet the claimed features that are missing in Stapleton. Hence, no combination of the documents would have suggest that which is not claimed. Accordingly, it is respectfully requested that the rejection based on Stapleton and Poulter be withdrawn.

As mentioned above, the office action also includes a rejection of claims 2-5, 8-11, 14 and 15 under 35 U.S.C. § 103(a) as being obvious over Stapleton and Poulter in view of Allmond; a rejection of claims 16 and 34-36 under 35 U.S.C. § 103(a) as being

obvious over Stapleton and Poulter in view of Patel; and a rejection of claim 17 under 35 U.S.C. § 103(a) as being obvious over Stapleton, Poulter and Patel in view of Allmond. However, the Allmond and Patel patents, whether considered individually or in any combination with Stapleton and Poulter, fail to teach or suggest each and every feature recited in independent claims 1, 7 and 13, as presently claimed.

Allmond describes a communication protocol detection system and method for network systems for enabling a network system to detect and interface on or more network devices operating within domains pertaining to different communication protocols. (Abstract). In column 13, starting at line 21, Allmond describes a repeater (302) including a plurality of interface modules (400a to 400x), each including a separate transceiver to transmit data on a port link (402) at the correct repeater module (406 to 412), which can be operating on 10Base-T and 100Base-T protocols, for example. A processor (420) in the repeater monitors and controls the status of the modules according to link signal provided by the interface modules and enable either the 10Base-T transceiver or the 100Base-T transceiver depending on the protocol of the network device. However, the Allmond patent does not teach or suggest, among other things, a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, the method comprising: monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected to n outputs of a preceding one of the controllers, as presently claimed. Furthermore, *only one* communication channel appears to be formed through each of the interface modules of Allmond. Thus, Allmond indeed does not teach or suggest the claimed features relating to monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected to n outputs of a preceding one of the controllers, as presently claimed.

Patel also does not teach or suggest the claimed features missing in Stapleton and Poulter. With reference to column 4, lines 20-31, Patel describes a system including shared auto-negotiation logic for a multiple port intermediate network device. In Patel, a shared auto-negotiation unit is coupled to a set of the ports rather than implementing an auto-negotiation state machine in each of the ports. (See col. 4, lines 2-4 and 32-40 of Patel). However, there is no mention or suggestion anywhere in Patel of a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, the method comprising: monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected to n outputs of a preceding one of the controllers, as presently claimed. Instead, Patel describes a system that utilizes a multiplexer (*i.e.*, an [n]x1 PorMux 202) to connect between the ports and the auto-negotiation unit (see, column 4, lines 50-55 of Patel). Accordingly, no combination of Stapleton, Poulter, Allmond and Patel would have taught or suggested what is recited in independent claims 1, 7 and 13, as presently claimed.

Contrary to the teachings of the references described above, the claimed invention is directed to a system, method, and computer readable medium that enables identification of identifying at least one of a plurality of communication channels available for communication between one of a plurality of devices and ports of a server. Each communication channel is connectable to a respective port on the server, which allows for monitoring each of a particular port of the server associated with the channel, determining whether at least one of the plurality of communication channels and associated port is being used for the transmission of link pulses by the server, and establishing a connection between the device and the server using one of the available communication channels associated with the port determined to have the link pulses. To form and monitor the communication channels, the claimed invention utilizes controllers in a cascading arrangement to allow for communication channels to be selectively formed either through one or more of the controllers or to a device associated with one of the controllers. These features provide a

number of advantages over the teachings of the applied references, including enabling equipment in a network to be conveniently rearranged, added or removed as desired, enabling easier servicing of network communication buses since the buses need not be bundled together, lowers costs, and provides increased reliability since network equipment may be provided with a simple, universal interface arrangement.

In view of the present amendments and remarks, the Office is respectfully requested to reconsider and withdraw the rejection of independent claims 1, 7 and 13. Since claims 2-6, 8-12, 14-18 and 31-36 depend from, and therefore contain the limitations of claims 1, 7 and 13, they are also distinguishable over the cited references and patentable in the same manner.

Based on the foregoing, Applicants submit that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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